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FUSIFORM RUST OF PINE

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Fusiform rust, caused by the fungus Cronartium fusiforme Hedge. & Hunt, is the most serious disease of pine in Florida (1). Slash (Pinus elliottii) and loblolly (P. taeda) are highly susceptible, whereas longleaf (P. palustris) and shortleaf (P. echinata) are quite resistant (3).

SYMPTOMS AND LIFE HISTORY. Fusiform rust lives from year to year in pine, causing spindle-shaped galls (Fig. 1). Old galls often die on one side and form flat cankers. Such cankers weaken the stem so that wind breakage is common.

In the spring, pine galls are covered with bright orange aeciospores which can infect only young leaves of evergreen oaks. There, minute yellowish fungus pustules form on the underside of the leaves causing only minor injury. Urediospores from these pustules infect only other oak leaves. Water, willow, and laurel oaks are the most susceptible (2).

A few days later, numerous hairlike structures, called telia, develop around the margins of the spots. Teliospores are produced, germinate, and form sporidia, the spores that infect young needles or young growing shoots of pine. This entire process occurs only in the spring; usually from March to June.

Fig. 1. Fusiform rust gall on slash pine branch.

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CONTROL. Because rust spores are wind disseminated over great distances, removal of susceptible oaks is not a practical control measure.

In the nursery, plants may be protected by weekly sprays of a fungicide such as ferbam or zineb; however, spraying is not economically feasible in plantations or forests.

Several cultural practices are recommended to reduce damage: (a) avoid planting slash and loblolly pines where there is a high incidence of rust; (b) do not cultivate or fertilize pines, as this leads to early breaking of dormancy and increased susceptibility; (c) prune branches with cankers located less than 15 inches from the main stem, since the fungus often grows from these cankers to form trunk cankers; (d) remove young trees showing trunk cankers, as these trees seldom survive more than a year after transplanting; (e) plant disease-free nursery stock (1).

Literature Cited

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